IN THE CLAIMS

1. (Withdrawn) A method for detecting an object in video data,

the video data including a background area and at least one object area, the video data comprising frames divided into blocks, the method comprising the steps of:

extracting a moving vector from each block of a frame;

estimating a movement of the background area in the video data by referring to the moving vectors;

eliminating the estimated movement of the background area from the video data; and

detecting the object area by referring to the moving vectors in the video data from which the movement of the background area is eliminated.

2. (Withdrawn) The object detection method according to claim 1, further comprising the step of:

eliminating a low reliability moving vector from the video data after extracting the moving vector of each block.

3. (Withdrawn) The object detection method according to claim 1, wherein the estimating step includes the steps of:

approximating the movement of the background area by a predetermined transformation model; and

estimating a transformation coefficient of the transformation model by referring to the moving vectors in the video data.

4. (Withdrawn) The object detection method according to claim 3, wherein the transformation coefficient of the conversion matrix is estimated by a robust estimation method.

5. (Withdrawn) The object detection method according to claim 1, wherein the estimating step includes the steps of:

unifying blocks having similar moving vectors, the frame being thus divided into a plurality of unified areas;

estimating the transformation coefficient of each unified area;

clustering the unified areas each having similar transformation coefficient; and

assigning the largest clustered area as the background area.

6. (Withdrawn) The object detection method according to claim 1, wherein the estimating step includes the steps of:

unifying blocks having similar moving vectors in a frame;

comparing a plurality of frames each being divided into a plurality of unified areas;

estimating the transformation coefficient of each unified area in the plurality of frames;

clustering the unified areas each having similar transformation coefficient for each frame;

determining the correspondence of unified areas among the plurality of frames;

correcting the clustering result so that each of corresponding unified areas belongs to the same cluster among the plurality of frames; and

assigning the largest clustered area as the background area in the plurality of frames.

7. (Withdrawn) An apparatus for detecting an object in video data, the video data including a background area and at least one object area, the video data comprising frames divided into blocks, comprising:

extraction means for extracting a moving vector from each block of a frame;

estimation means for estimating movement of the background area in the video data by referring to the moving vectors;

elimination means for eliminating the estimated movement of the background area from the video data; and

object detection means for detecting the object area by referring to the moving vectors in the video data from which the movement of the background area is eliminated.

8. (Withdrawn) A computer readable memory containing computer readable instructions for detecting an object in video data, the video data including a background area and at least one object area, the video data comprising frames divided into blocks, comprising:

instruction means for causing a computer to extract a moving vector from each block of a frame;

instruction means for causing a computer to estimate a movement of the background area in the video data by referring to the moving vectors;

instruction means for causing a computer to eliminate the estimated movement of the background area from the video data; and

instruction means for causing a computer to detect the object area by referring to the moving vectors in the video data from which the movement of the background area is eliminated.

9. (Currently Amended) A video data description method, comprising:

extracting feature data of a predetermined object and feature data of a background area from a frame of an input video;

describing the feature data of the predetermined object and the feature data of the background area as a descriptor of the frame, the feature data of the predetermined object including <u>an affine transformation coefficient</u> a color histogram of an area of the predetermined object, <u>wherein the affine transformation coefficient is estimated based on movement of the predetermined object, which is approximated by an affine transformation model</u> the color histogram representing each color element; and

attaching the descriptor to the frame.

10. (Previously Presented) The video data description method according to claim 9, wherein the describing step comprises:

describing a difference between the feature data of the predetermined object and the feature data of the background area as the descriptor.

11. (Original) The video data description method according to claim 9, wherein the feature data of the predetermined object includes at least position, outward form, and moving information of the object, and

wherein the feature data of the background area includes at least moving information of the background area.

12. (Original) The video data description method according to claim 9, wherein the descriptor includes a frame number, a pointer to a next descriptor, the feature data of the background area, and the feature data of each object in the frame.

13. (Previously Presented) The video data description method according to claim 12, wherein the descriptor is created from a corresponding frame at an interval of a predetermined number of frames in the input video.

14. (Currently Amended) A computer readable memory containing computer readable instructions, comprising:

instruction means for causing a computer to extract feature data of a predetermined object and feature data of a background area from a frame of an input video;

instruction means for causing a computer to describe the feature data of the predetermined object and the feature data of the background area as a descriptor of the frame, the feature data of the predetermined object including an affine transformation coefficient a color histogram of an area of the predetermined object, wherein the affine transformation coefficient is estimated based on movement of the predetermined object, which is approximated by an affine transformation model the color histogram representing each color element; and

instruction means for causing a computer to attach the descriptor to the frame.

15. (Withdrawn) A video data retrieval method, comprising the steps of:

describing feature data of a predetermined object and feature data of a background area for each frame in a plurality of frames;

inputting feature data of a retrieval object;

calculating a difference between the feature data of the background area and the feature data of the predetermined object for each frame;

comparing the difference with the feature data of the retrieval object; and

retrieving the predetermined object or the frame including the predetermined object

matched with the retrieval object from the plurality of frames according to the comparison

result.

16. (Withdrawn) The video data retrieval method according to claim 15,

wherein the describing step includes the step of:

describing the difference between the feature data of the background area and the

feature data of the predetermined object.

17. (Withdrawn) The video data retrieval method according to claim 15,

further comprising steps of:

inputting feature data of the background area representing camera work;

comparing the input feature data with the feature data of the background area of each

frame; and

retrieving the frame obtained by a camera work matched with the camera work of the

input feature data from the plurality of frames according to the comparison result.

18. (Withdrawn) The video data retrieval method according to claim 15,

wherein the feature data of the predetermined object includes moving information of

the predetermined object for each frame, and

further comprising the steps of:

inputting a moving information of the retrieval object;

sampling the moving information of the retrieval object at the frame interval;

comparing the sampled moving information with the moving information of the

predetermined object of each frame; and

retrieving the predetermined object or the frame including the predetermined object

matched with the retrieval object from the plurality of frames according to the comparison

result.

19. (Withdrawn) A video data retrieval apparatus, comprising:

memory means for storing a descriptor of feature data of a predetermined object and

feature data of a background area for each frame in a plurality of frames;

input means for inputting feature data of a retrieval object;

calculation means for calculating a difference between the feature data of the

background area and the feature data of the predetermined object; and

retrieval means for retrieving the predetermined object or the frame including the

predetermined object matched with the retrieval object from the plurality of frames by

comparing the difference with the feature data of the retrieval object.

20. (Withdrawn) A computer readable memory containing computer readable

instructions, comprising:

instruction means for causing a computer to describe feature data of a predetermined

object and feature data of a background area for each frame in a plurality of frames;

instruction means for causing a computer to input feature data of a retrieval object;

instruction means for causing a computer to calculate a difference between the feature

data of the background area and the feature data of the predetermined object;

instruction means for causing a computer to compare the difference with the feature

data of the retrieval object; and

instruction means for causing a computer to retrieve the predetermined object or the

frame including the predetermined object matched with the retrieval object from the plurality

of frames according to the comparison result.

21. (Previously Presented) The video data description method of claim 9, wherein the

feature data of the predetermined object includes average and direction of a moving vector.

22. (Currently Amended) The video data description method of claim 9, wherein the

feature data of the background area includes at least one of <u>an affine transformation</u>

<u>coefficient of the background area</u> a color histogram and camera-work information describing

an operation of a camera used for the input video.

23. (Previously Presented) The computer readable memory of claim 14, wherein the

feature data of the predetermined object includes average and direction of a moving vector.

24. (Currently Amended) The computer readable memory of claim 14, wherein the

feature data of the background area includes at least one of <u>an affine transformation</u>

<u>coefficient of the background area</u> a color histogram and camera-work information describing

an operation of a camera used for the input video.